REMARKS

Claims 1-12 are pending in this application.

Rejection under 35 U.S.C. 102(e)

Claims 1, 3, and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Arita *et al.* (US 6,046,490).

As it has been previously pointed out that the claimed invention is quite different from Arita in that given the presence of second wiring layers 24a and 24b on silicon oxide film 22, nitrogen cannot cover the entire top surface of the silicon oxide film 22. These limitations are shown in Figure 1 and associated written explanation of Arita.

In contradistinction, in the claimed invention, as shown by way of an example in Figure 10 and associated written description, nitrogen can be introduced on top of insulating film 33 thus fulfilling the claimed language of "wherein nitrogen resides all over the planarized surface of the silicon oxide film" of independent claims 1, 5 and 12.

Therefore, the claimed invention is already patentably distinguished over Arita. All claims dependent thereon, by virtue of inherency, are also already patentably distinguished over Arita.

In the interest of furthering the prosecution of this application, independent claims 1, 5 and 12 are respectively amended to recite "a wiring formed over the silicon oxide including nitrogen", "a second wiring formed over the fourth insulating film including nitrogen", and "a wiring formed over the second insulating film including nitrogen." The

second wiring is shown by way of an example in Fig. 16 as wiring 36. These newly added features are not disclosed or taught in the prior art.

An important aspect of the present invention is as shown in Fig. 10 where nitrogen is introduced all over the surface of the silicon oxide film 33 by a nitrogen plasma processing to cover the entire planarized surface of the silicon oxide film 33. It is, for instance, a nitrogen plasma annealing processing performed with a temperature of more than 350 ℃ for more than 3 minutes, preferably for more than 4 minutes. The moisture in the silicon oxide film 33 is discharged to the outside and SION is formed into and at least on the surface of the silicon oxide film 33 by the introduction of nitrogen.

In other words, nitrogen resides all over the planarized surface of the silicon oxide film 33. Wiring 36 is formed with nitrogen on the silicon oxide film 33 as shown in Fig. 16 of the present invention.

These features are disclosed on page 22, line 24 to page 23, line 19 of the written specification. An attached revised drawing of Fig. 10 showing by representative depiction of where nitrogen resides on silicon oxide film 33 is submitted herewith as Addendum A for the convenience of the Examiner.

On the other hand, Arita discloses in Fig. 1 that a passivation film 14 consisting of silicon nitride or silicon nitride oxide covers an insulating layer 22 and wiring layers 24a and 24b residing on the insulating layer 22.

As shown in Fig. 16 which is submitted herewith as Addendum B, the passivation film 14 is formed by using a CVD method.

It is possible for nitrogen to be introduced into the surface of the insulating layer 22, which layer 22 is not covered with wiring layers 24a and 24b as alleged by the

Examiner. However, since the passivation film 14 in Arita is formed by using the CVD method, it is hard for nitrogen to enter into the surface of the insulating layer 22.

In the CVD method, a thin passivation film is formed at an early stage and the film blocks nitrogen from entering into the insulating later 22. Consequently, nitrogen is unable to enter thereunder wiring layers 24a and 24b as shown in attached Fig. 1 (No. 2), which is submitted as Addendums C and D.

To the contrary, in the present invention, nitrogen enters uniformly even under wiring layers 24a and 24b as shown in attached Fig. 16, which is submitted herewith as Addendum B. This is because in a nitrogen plasma annealing processing performed at a temperature of more than 350 ℃ for more than 3 minutes, preferably for more than 4 minutes, moisture will be discharged from the silicon oxide film 33. By so discharging the moisture, nitrogen is introduced to the surface of the silicon oxide film 33.

Rejection under 35 U.S.C. 103

Claims 2 and 4 are rejected under 35 U.S.C. §103(a) as being unpatentable over Arita et al. (US 6,046,490) as applied to claim 1 above, and further in view of Singh et al. (US 5,847,464).

Claims 5 and 9-11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Mochizuki et al. (US 5,990,507) in view of Arita et al. (US 6,046,490).

Claims 6-8 are rejected under 35 U.S.C. §103(a) as being unpatentable over Mochizuki et al. (US 5,990,507) in view of Arita et al. (US 6,046,490) as applied to claim 5 above, and further in view of Singh et al. (US 5,847,464).

As mentioned in the response to the rejection in which these rejections are based, independent claims 1, 5 and 12 are further patentably distinguished over Arita. All claims dependent thereon, by virtue of inherency, are also further patentably distinguished over Arita further in view of whatever secondary reference.

Reconsideration and withdrawal of this rejection are respectfully requested.

CONCLUSION

By so amending, all claims are believed to be in condition for allowance.

In the event that this paper is not timely filed, applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 50-2866.

Respectfully submitted,

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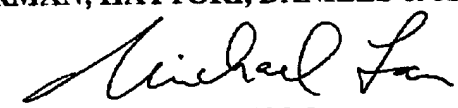

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